STANDARD-SIZED ISO CARDS, CONFIGURABLE TO PRACTICALLY ANY APPLICATION REQUIREMENTS INCLUDING MULTIPLE TECHNOLOGIES

Customers can trust ASSA ABLOY engineering and manufacturing expertise to deliver the world’s most advanced and reliable contact and contactless cards. These cards combine innovative printing and radio frequency identification (RFID) technologies with industry-leading knowledge in the production of secure identity components and solutions. Proven processes and automated manufacturing ensure efficient and cost-effective production of high quality cards.

ISO cards are used in billions around the world, ranging from simple, non-technology printed loyalty cards to highly secure access control, payment or citizen ID cards. ASSA ABLOY’s expertise allows fulfilling almost any need you may have on an ISO card.

Cards can be made from a choice of materials ranging from low-cost PVC over composite to high-end polycarbonate materials for increased temperature resistance and durability. Cards may be delivered blank-white for later personalization with Direct to Card (DTC) printers or already be delivered pre-printed with high-quality offset or silk-screen printing. Optionally, features like holograms, micro-text, security inks, custom magnetic stripes, thermo-rewriteable areas and many more may be included on a card.

ASSA ABLOY can provide cards with almost any contact or passive RFID technology ranging from LF, HF/NFC to RAIN UHF. All major chip manufacturers are supported. Dual-Interface cards allow the mix of contact and contactless interface sharing a single chip. Multiple technologies may be combined in one card to support migration or multi-application scenarios.

Patented DBond™ technology connects the antenna directly to the chip instead of using a bulky chip module. This method is available for many common RFID chips like Unique or Mifare EV1. It provides perfect printability of cards in DTC printers and improves mechanical reliability of the RFID components.
## SPECIFICATIONS

**CONTACTLESS ISO CARDS**

**OPERATING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Single-Frequency</th>
<th>Combo</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>125 kHz</td>
<td></td>
</tr>
<tr>
<td>HF</td>
<td>13.56 MHz</td>
<td></td>
</tr>
<tr>
<td>UHF</td>
<td>860 to 960 MHz</td>
<td>125 kHz, 13.56 MHz or UHF</td>
</tr>
</tbody>
</table>

**ELECTRONIC**

- **Operating Frequency**
  - LF: 125 kHz
  - HF: 13.56 MHz
  - UHF: 860 to 960 MHz

- **Chip Type**
  - Hitag: 1, 2, S
  - Q5, Titan, Unique, AD6577
  - LEGIC: MIM2025, MIM1024, ATC1024-MV
  - ICode SLIX (2), ICode SLIX S, Vigo™
  - MIFARE UltraLight, UltraLight C
  - MIFARE Classic EV1: 1K, 4K
  - MIFARE Ultralight EV1: 128 Bytes
  - MIFARE Plus EV1 2K
  - MIFARE Plus EV1 4K
  - MIFARE Plus SE 1K, 4K
  - MIFARE DESFire EV1: 256, 2K, 4K
  - 8K: MIFARE DESFire EV2: 2K, 4K, 8K
  - BLE685639, LEGIC
  - ATC4096-MP, CTC4096, NTAG 213, NTAG 216
  - Calypso
  - HID Trusted Tag™

- **Memory**
  - 64 bit read-only to 2048 bit read-write
  - 256 to 4096 bit EEPROM
  - 1024 to 2048 bit EEPROM
  - 64 to 8192 byte EEPROM
  - 128 bit EPC + 512 bit user memory

- **Anti-Collision**
  - Yes (Hitag)
  - Yes (ATC)
  - Yes

**PHYSICAL**

- **Dimensions**
  - ISO card: 3.4 x 2.1 x 0.03 in (85.6 x 54 x 0.76 mm)

- **Card Body Material**
  - PVC (default)

- **Color**
  - White (other colors or transparent on request)

**CHEMICAL AND MECHANICAL**

- **Water**
  - IP68, 68° F (20° C), 3.3 ft (1 m) x 24 h

- **Withstands Exposure to**
  - Acetic acid water, artificial perspiration, carbonated sodium water, ethylene glycol, fuel oil, salt mist, salt water, sugared water; humidity 95% at 122° F (50° C) 24 h

- **Force**
  - Dynamic bending and torsion, 4 x 250 bends

**THERMAL**

- **Storage**
  - PVC: -31° to +122° F (-35° to +50° C), Composite: -40° to +158° F (-40° to +70° C)

- **Operating**
  - PVC: -31° to +122° F (-35° to +50° C), Composite: -40° to +158° F (-40° to +70° C)

- **Shock/Fatigue**
  - -31° to +176° F (-35° to +80° C), 50 cycles, 5 min soaking time, 20 sec transition

**OTHER**

- **Standards**
  - ISO 7810, ISO 7816, optional NFC
  - ISO 15693 (ATC only)
  - ISO 15693, ISO 18000-3
  - ISO 14443
  - EPC C1G2, ISO 18000-6

- **Optional Features**
  - Artwork; encoding; visual pre-personalization via inkjet, thermal printing or laser marking; magnetic stripe; thermo-rewritable area; signature panel and optical security features; non-technology cards, or other contact, contactless or dual-interface chips.

- **Optional Materials**
  - PC, PETG or Composite (Note: Chemical, mechanical and thermal tolerances will vary versus standard PVC, listed above.)

- **Warranty**
  - 1 year

ASSA ABLOY can create a custom card solution to fit your application requirements for chip type, programming and memory. Also, inquire about alternate form factors, such as contactless sticker cards, mini cards and fobs.